

## Macromolecule Lab

Standard: Macromolecules are made from a small collection of simple precursors.

### Purpose

- To understand the tests for macromolecules in foods.
- To discover the types of nutrients contained in a variety of foods.

Fill in the table.

Macromolecule →				
Simple Precursor →				
Function →				

### Materials

**(To be taken to your table)**

- \* 6 test tubes
- \* 1 well plate
- \* Test tube holder
- \* Paper towels

### Supplies

**(To remain at the supply table)**

- \* Benedict's Solution w/dropper
- \* Lugol's Solution w/dropper
- \* Biuret's Solution w/dropper
- \* Hot Water Bath
- \* Test Tube clamps
- \* Negative Test Indicators

### Procedure

1. Prepare 6 test tubes with food samples.
  - a. Put a small amount of food at the bottom of the test tube
  - b. Return to your station
2. Translucency tests lipids
  - a. Place a dab of food sample on a piece of paper towel.
  - b. Let each sample dry before checking for translucency.
  - c. Record any observations.
3. Lugol's solution tests starch
  - a. Use a stir stick to put a small drop of EACH food from the test tube into a different well in the Well plate
  - b. Add a drop of Lugol's solution to each well.
  - c. Record any color changes.
4. Biuret solution tests protein
  - a. Use a stir stick to put a small drop of EACH food from the test tube into a different well in the Well plate
  - b. Add a drop of Biuret solution to each well.
  - c. Record any color changes.
5. Benedict's solution tests sugar
  - a. Add a dropperful of Benedict's solution to each test tube.
  - b. Place the test tube in a hot-water bath.
  - c. Heat for 5 minutes.
  - d. Record any color changes.

- e. Record whether the sample dried or remained see-through in the Observation section.

Observations - record any color changes or translucency seen.

Nutrient	Foods				
	Corn	White beans	White bread	Potato chips	Peanut butter
Sugar					
Starch					
Protein					
Lipid					

Data - based on the observations, assign between ++++ for a really positive result or ---- for a really negative result. You may put less or more + or - depending on your observations.

Nutrient	Foods				
	Corn	White beans	White bread	Potato chips	Peanut butter
Sugar					
Starch					
Protein					
Lipid					

#### Questions

1. Why was it necessary to have the negative test to compare your results to?
2. What types of nutrients were present in the food samples?
3. List other foods that are like the ones you tested. Do you think they would have similar results? Why or why not?